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Discharge Phone Call on Unplanned Readmission Due to Chemotherapy Among Cancer Patients

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

The transition after hospitalization is a vulnerable period when adverse events like unplanned readmissions may occur. Unplanned readmissions with patients undergoing chemotherapy that are the result of gaps in communicating the discharge plan may be preventable. Several transitional care interventions have been explored, and one of these is the nurse discharge phone call. This project explored the effect of a nurse-led transitional discharge phone call within 30-days after hospital discharge on unplanned readmission due to chemotherapy among patients in the medical-oncology compared to patients without a nurse-led transitional discharge phone call. A nurse-led transitional discharge phone call was implemented within 48 to 72 hours after discharge from the medical-oncology unit of a hospital in the northeastern region of United States to determine its effectiveness in reducing the number of unplanned readmissions due to chemotherapy. The Donabedian model, the Iowa model of evidence-based practice to promote quality care, the diffusion of innovation theory, and the health belief model served as the theoretical underpinnings of the project. Seven patients undergoing chemotherapy received the discharge phone call, and none were readmitted due to cancer-related complications. The unplanned hospital readmission rate was 0% compared to the 14.17% in 2017. The findings of this project might contribute to positive social change by helping the community of patients on chemotherapy to have a better transition process through acquiring necessary information for their postdischarge care and thus mitigating the possible causes of unplanned hospital readmission.

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Dedication

I would like to dedicate this project to my mom, Olivia, who endlessly inspires me to be better. I also dedicate this project to my dad, Marino, and my sister, Carla, who have been watching us from heaven. Lastly, to my family, especially Auntie Patty and Ruby, who supported us in this lifelong journey.

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Section 1: Nature of the Project

Introduction

The period after hospitalization remains a particularly vulnerable time for most patients, especially among those with cancer undergoing chemotherapy (Ji, Abushomar, Chen, Qian, & Gerson, 2012; Patel, Nguyen, Bachler, & Atkinson, 2017). During this period, several adverse events may occur, such as temporary or permanent disability, adverse drug events (Forster, Murff, Peterson, Gandhi, & Bates, 2003), and hospital-acquired infection (Liang & Alper, 2018). All of these adverse events may lead to unplanned hospital readmission, which refers to the unexpected admission of a cancer patient on chemotherapy within 30 days of discharge (Cochran, Blair, Wissinger & Nuss, 2012). A reason for the development of these adverse events is the poor communication and understanding of the discharge plan during the posthospitalization transition. Therefore, hospital-based transitional care interventions have been adopted to facilitate the transition of patients to the out-patient setting. One strategy is nurse-led transitional discharge phone calls (Hammerstrom, 2013; Harrison, Hara, Pope, Young & Rula, 2011). These phone calls allow a healthcare professional to identify and address gaps in the posthospitalization discharge plan and reinforce discharge instructions, medication plans, and follow-up schedules (Harrison, Auerbach, Quinn, Kynoch, & Mourad, 2014).

Transitional discharge phone calls can also improve patient satisfaction by identifying the weak points in the discharge health plan that hinder the successful transition process of cancer patients undergoing chemotherapy. They bridge the gap in communication and the lack of follow-up with the patient using a cost-effective approach

that can strengthen the discharge health teaching. As a result, patients become more adherent to their discharge plan, experience less untoward complications, and have lesser likelihood for unplanned hospital readmissions. With the increasing focus on patient-reported experience measures and patient satisfaction to evaluate the quality of patient care, nurse leaders must lead the way to change the paradigm of medical care from being provider-focused to being patient-centered in order to ultimately result in better patient outcomes (Ang, Seretis, Wanigasooriya, Singh, & Chapman, 2015). A possible approach to ensure an evidence-based and patient-centered practice is to perform nurse-led transitional discharge phone calls. The results of the project can assist the institution in adopting a nurse-led transitional discharge phone call protocol among patients in the oncology unit, which may lead to fewer unplanned readmissions.

Problem Statement

The discharge process after hospital admission can be a stressful situation for patients. The complexity of the discharge process coupled with the patient's stress about leaving the hospital predisposes them for several adverse events (Hansen, Young, Hinami, Leung, & Williams, 2011). A key component of the discharge process is the communication and accurate transmission of vital information. Communicating accurate discharge health information is imperative to enhance the patient's and the family's understanding of the process, thus facilitating the transition from hospital setting to home care (Tang, Fujimoto, & Karliner, 2014). However, although healthcare professionals provide patients with the necessary information before they leave the hospital, patients remain uninformed (Hand & Cunningham, 2014). The poor understanding of discharge

teachings by patients and the lack of posthospitalization monitoring by healthcare providers increase the likelihood for hospital readmissions attributed to temporary disability, permanent disability, adverse drug events (Forster, et al., 2003), and hospital-acquired infection (Liang & Alper, 2018). Patients with cancer and on chemotherapy are particularly at risk for readmission because of several factors that affect their health requiring more inpatient care than most other patients. The complexity of care required for patients on chemotherapy creates substantial challenges in planning for appropriate postdischarge support (Mistiaen & Poot, 2006).

Unplanned hospital readmission among patients with cancer and on chemotherapy is attributed to several causes. The leading causes of unplanned readmission among patients undergoing chemotherapy include pain, infection without neutropenia, and febrile neutropenia (Gibson & McConigley, 2016). Other reasons for hospital readmission after chemotherapy include nausea and vomiting, diarrhea, dehydration, dyspnea, altered neurological status, bowel obstruction, anemia (Gibson & McConigley, 2016), total parenteral nutrition requirements, hemodynamic instability, and cardiac or respiratory distress (Mank et al., 2015). Furthermore, patients with cancer may necessitate certain diagnostic examinations and treatments that may cause unplanned readmissions. Some of these diagnostics and treatments include serological testing, radiological testing, intravenous fluid, pain medications, oral or intravenous antibiotic therapy, blood or other blood products, and oxygen therapy (Gibson & McConigley, 2016). These adverse events, coupled with the complex postdischarge care needing

accurate discharge information, further accentuate the need to bridge the communication gap during the discharge process.

Purpose Statement

A key issue during the posthospitalization period is the likelihood of adverse events that may lead to unplanned readmissions. Although these adverse events are preventable, unplanned readmissions are still common among patients with cancer undergoing chemotherapy. The purpose of the project was to implement a nurse-led transitional discharge phone call intervention among cancer patients undergoing chemotherapy and to determine its effect on unplanned hospital readmission in comparison to nonreceipt of the nurse-led transitional discharge phone calls. The intervention can help healthcare professionals including nurses identify gaps in the discharge plan and strengthen the understanding of the discharge instructions, medication plan, and follow-up schedules (Harrison et al., 2014) leading to fewer unplanned hospital readmissions.

Nature of Doctoral Project

The objective of the project was to decrease or prevent unplanned hospital readmissions among cancer patients undergoing chemotherapy in a Northeastern hospital in the United States. By searching for pertinent articles on nurse-led transitional discharge phone calls from reputable research databases using a comprehensive search strategy, I planned the implementation of the intervention, the nurse-led transitional discharge phone call, in the medical-oncology unit of the selected hospital. This unit has a 28-bed capacity and caters to the various needs of patients with cancer. Currently,

although unplanned hospital readmission for chemotherapy is an exemption in the Centers for Medicare and Medicaid Services (CMS; 2018) guidelines, the hospital had 11 unplanned readmissions due to chemotherapy-related events out of 74 patients (14.86%) in 2017. Through the intervention, the target was to significantly reduce the number of unplanned hospital readmission due to chemotherapy in 2018.

Significance

The project significantly impacts both patients with cancer and the healthcare providers of these patients. Patients with cancer may experience complications of chemotherapy which may lead to unplanned hospital readmission. This approach may not only improve their health outcomes but may also mitigate unexpected or unplanned financial expenses caused by the inadvertent hospitalization. Likewise, healthcare professionals caring for patients undergoing chemotherapy may benefit from the study through a cost-effective postdischarge methodology that may ensure smooth posthospitalization discharge, lower rates of preventable hospitalization, and efficient use of healthcare resources. Nurses in hospitals can adopt the project and the intervention in their respective units, which may help in the actualization of a more patient-centered healthcare delivery and may facilitate better patient outcomes. The social change that this project promoted is better self-reliance and self-care of patients during the postdischarge period as facilitated by the nurse-led discharge phone calls.

Summary

Unplanned hospital readmission is a preventable adverse outcome during the posthospitalization period. Despite being preventable, these outcomes still occur,

especially among patients undergoing chemotherapy, and they necessitate appropriate interventions during the transition from the hospital-setting to the patient's home. Healthcare professionals such as nurses may utilize transitional discharge phone calls as a strategy to bridge the communication gap during the transition process by reinforcing the discharge plan of these patients, lowering the number unplanned readmissions.

Section 2: Background and Context

Introduction

The DNP project was conducted in the medical-oncology unit of a Northeastern hospital in the United States that experienced 11 unplanned hospital readmissions due to chemotherapy in 2017. The main purpose of this evidence-based practice improvement program was to implement a nurse-led transitional discharge phone call for patients with cancer within 48 to 72 hours after hospital discharge. This objective was guided by the following practice-focused question:

> PFQ: Among patients in the medical-oncology unit, what is the effect of a nurse-led transitional discharge phone call within 30-days after hospital discharge on unplanned readmission due to chemotherapy compared to patients without a nurse-led transitional discharge phone call?

In this section, I discuss the concepts, models, and theories used in the development of the project as well as the relevance of the project to nursing practice and its local background and context. This section also provides an overview of my role as the DNP student.

Concepts, Models, and Theories

In the project I used four models for its theoretical underpinning. These models were the Donabedian model (Donabedian, 1982), the Iowa model of evidence-based practice to promote quality care (Titler et al., 2001), the diffusion of innovation theory (Rogers, 2003), and the health belief model (Becker, 1976). The Donabedian model (Donabedian, 1982) describes a structure in exploring the health services and assessing

the quality of healthcare in a healthcare facility. It is commonly used in different healthcare organizations to evaluate the quality of healthcare service in three areas: structure (characteristics of the healthcare setting), process (clinical processes performed in the healthcare setting), and outcome (status of patients after a set of interventions; Donabedian, 1982).

In terms of structure, the Donabedian model emphasizes that physical and organizational aspects of healthcare organizations should have sufficient facilities, satisfactory equipment, qualified healthcare providers, and efficient administrative programs (Donabedian, 1982). On the other hand, the process dimension addresses if healthcare services are delivered in suitable, acceptable, and competent conditions (Donabedian, 1982). Lastly, the outcome dimension is directed towards the end results of healthcare services for patients. Several outcome indicators have been grounded on the function, recovery, and survival of patients, which can be quantitatively measured. Some of these indicators include death, incidence of adverse events, hospital readmission, patient satisfaction, and quality of life (McDonald et al., 2007).

Figure 1 illustrates the contextualization of the Donabedian model in the study and the different components of the model: structure, process, and outcome. As presented, the structure referred to the medical oncology unit where patients with cancer undergo chemotherapy, and the process dimension reflected the intended intervention, the transitional discharge phone call. With the inclusion of the transitional discharge phone call in the discharge process of these patients, it was expected that the 30-day unplanned readmission of patients would decrease.

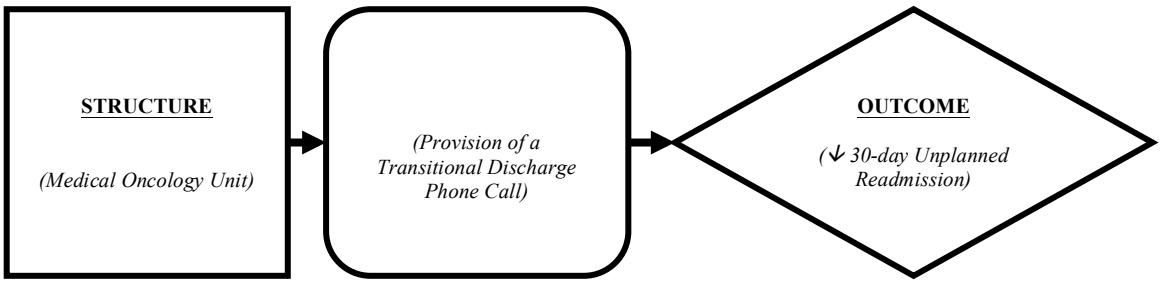

Figure 1. Conceptualization of the Donabedian model in the study.

The second theoretical underpinning of this project was the Iowa model of evidence-based practice to promote quality care by Titler et al. (2001). The Iowa model helps healthcare providers translate research findings into clinical practice and improve patient outcomes. The first step in the Iowa model is to identify a problem-focused trigger or a knowledge-focused trigger where an evidence-based practice change is needed. Problem-focused triggers are problems derived from data of risk management analysis, financial analysis, and clinical problem identification, while knowledge-focused triggers are problems rising when new research findings or new practice guidelines are needed (Titler et al., 2001). The second step is for a team to determine if solving the problem is a priority of the institution. Afterwards, the third step is to form a team who will develop, evaluate, and implement the practice change. The team must be composed of interested interdisciplinary stakeholders (Titler et al., 2001). The fourth step is to gather and to critique research related to the desired change.

The fifth step is appraising available studies to determine if the change is scientifically-sound. The team needs to decide whether sufficient research exists to implement a practice change. Titler et al. (2001) suggested the following criteria in

deciding if sufficient research supports the practice change: (a) consistent findings across numerous studies, (b) the type and quality of the studies, (c) the clinical relevance of the results, (d) the number of studies with similar sample characteristics, (e) the feasibility of the findings in practice, and (f) the risk-benefit ratio. If a majority of the criteria are met, the team should plan to implement the intervention in a pilot practice change. If adequate research does not exist, an actual research study might be conducted.

The sixth step is to implement the intervention into a pilot practice change. At this step, the team will not implement a practice change in the entire organization but conduct it in smaller areas. This approach is done to initially determine the feasibility of the implemented change and also to determine the outcomes of the change. If the intervention is successful, it can then become an organizational practice change. Once the practice change has been implemented, the team must continuously monitor and evaluate the practice to ensure adherence to the intervention plan. In the project, the Iowa model guided me in implementing the practice change, which was the provision of the nurse-led transitional discharge phone calls.

The third theory or model utilized in this project was the diffusion of innovation theory by Rogers (2003), which theorizes that the communication of a certain product or change gains momentum and diffuses through a social system leading to adoption to the new idea, behavior, or product. Rogers (2003) emphasized that the process of diffusion and adoption of a new behavior, idea, or product differs among varied population and identified five (5) categories of adopters. These categories are the innovators, the early adopters, the early majority, the late majority, and the laggards. Rogers (2003) also

accentuated that the stages of adopting an innovation include the awareness of the need for an innovation, the decision to adopt or reject the innovation, the initial use of the innovation, and the continued use of the innovation. Rogers (2003) also identified four factors that influence the adoption of an innovation: relative advantage, compatibility, complexity, and observability. This theory was applied in this project with the different healthcare professionals involved in the implementation of the intervention at the study site. Some healthcare professionals may be resistant in adopting the intervention while others may have better acceptance, which may affect the continued implementation of the intervention in the study site.

I used the health belief model by Becker (1976) to theoretically ground the plan and implementation of the nurse-led transitional discharge phone call. The health belief model is a popular nursing theory used to promote patient compliance and preventive health practices. The health belief model encompasses five (5) major components: perceived susceptibility, perceived severity, perceived benefits and costs, motivation, and enabling or modifying factors. Perceived susceptibility is a patient's perception that a health problem is personally relevant, while perceived severity is their perception of the seriousness of the health problem. Perceived benefits are the patient's beliefs that a treatment or intervention will cure or prevent an illness, and perceived barriers include the complexity, duration, and accessibility of the intervention. Motivation refers to the patient's desire to comply with an intervention, while enabling or modifying factors are characteristics that promote motivation to adhere to the intervention (Becker, 1976). In the project, the health belief model was utilized to theoretically underpin the plan and

implementation of the intervention. Transitional discharge interventions assist healthcare professionals such as registered nurses in identifying the weak points in the discharge health plan and other factors that may hinder the successful transition process of cancer patients undergoing chemotherapy. By identifying these issues, registered nurses can bridge the gap in communication and the lack of follow-ups with the patient using a cost-effective approach that can strengthen the discharge health teaching. As a result, patients become more motivated with the home care and become more adherent to their discharge plan, experience less untoward complications or adverse events, and thereby lessen the likelihood of unplanned hospital readmissions.

Relevance to Nursing Practice

Unplanned hospital readmission is a prevalent (D'Amore, Murray, Powers, & Johnson, 2011) and expensive (Harrison et al., 2011; Kirkham, Clark, Paynter, Lewis, & Duncan, 2014) yet preventable complication of chemotherapy. Gibson & McConigley (2016) reported a readmission rate of 69.40% among patients undergoing chemotherapy occurring during the first 7 days after previous discharge. It was even reported that 22.60% of deaths occur during the unplanned hospital readmission (Gibson & McConigley, 2016). Harrison et al. (2011) found that the high readmission rate is generally attributed to the inadequate communication between the patient and their healthcare providers at the time of discharge and the failure of healthcare providers to follow-up with the patient after discharge. This gap in communication between the patient and their healthcare provider compromises the patient's ability to adapt from the

hospital setting to home care, leading to health complications that require hospital readmissions.

Aside from the physiological complications of poor discharge transition, its financial repercussion is substantial. In March 2010, the health reform in the Patient Protection and Affordable Care Act was passed (CMS, 2018). This healthcare law requires the CMS to reduce the payments to hospitals with high readmission rates after computing it using a standardized algorithm and formula (CMS, 2018). These reports and the changing healthcare law in the United States strengthens a healthcare organization's drive to explore cost-effective, feasible, and best-evidence practices that prevent unplanned readmissions among patients on chemotherapy.

With the increasing focus on preventing discharge complications such as unplanned readmission, hospitals have consistently searched for or devised different best practices to improve patient experience and prevent unplanned readmissions (D'Amore et al., 2011). One of the practices adopted in most hospitals is transitional care intervention, which includes transitional discharge phone calls. In the study of D'Amore et al. (2011), a postdischarge callback system was implemented to facilitate phone contact with patients after discharge, which found that completing a nursing call was a significant predictor of readmission. Specifically, D'Amore et al. (2011) found that readmission rate was 10.80% for patients who did not receive the phone call compared to the 9.50% rate of readmission for those who received the nursing phone call. In a similar vein, Briscoe, Heerschap, Kane, and Quatrara (2018) found that the 30-days readmission rate significantly decreased from 28.40% to 24.60% after implementing a scripted

postdischarge telephone follow-up by nephrology nurses. Gibson & McConigley (2016) even reported that pain (16.00%); infection without neutropenia (15.50%); fever or febrile neurtropenia (14.60%); nausea, vomiting, and dehydration (13.60%); and dyspnea (8.30%) were the top five reasons for unplanned readmission among patients with cancer.

Transitional discharge interventions such as transitional discharge phone calls aids healthcare professionals, including Registered Nurses, in determining weak points in the discharge health plan and other factors which hinder the successful transition process of cancer patients undergoing chemotherapy. With a nurse-led transitional discharge phone call, Registered Nurses can bridge the gap in communication and the lack of follow-ups with the patient using a cost-effective approach which can strengthen the discharge health teaching. As a result, patients can become more adherent to their discharge plan, experience less untoward complications or adverse events, and lessen the likelihood of unplanned hospital readmissions. The project also contributed to the growing knowledge and evidence on nursing interventions during the transition process from hospital to home care among cancer patients undergoing chemotherapy.

Local Background and Context

The DNP project was conducted in the medical-oncology unit of a Northeastern hospital in the United States. This medical facility had 15.90% hospital-wide unplanned 30-day readmission rate in 2017 (Hospital Care Data, 2018). However, this statistic includes the readmission rate due to chemotherapy-related events. Currently, readmission due to chemotherapy is an exemption in the Centers for Medicare and Medicaid Services (CMS) guidelines (CMS, 2018). Thus, a separate prevalence rate of readmission resulting

from chemotherapy-related events is not present. However, according to the manual report of the clinical pharmacist of the institution, there were 11 unplanned readmissions due to chemotherapy-related events out of 74 chemotherapy patients (14.86%) in 2017. These assertions prompted me to explore potential interventions that can reduce the 30-day unplanned hospital readmission of patients on chemotherapy.

Definition of Terms

Thirty-day unplanned hospital readmission: This refers to the unexpected hospital readmission of patients on chemotherapy within 30-days from their initial hospital discharge.

Chemotherapy patients: This refer to patients with cancer in the medical-oncology unit of a Northeastern hospital in the United States who are receiving chemotherapy as a management of their underlying oncologic disease.

Nurse-led transitional discharge phone call: This refers to the intervention to reduce the 30-day unplanned hospital readmission of patients on chemotherapy. It involves a phone call of all patients on chemotherapy within 48-72 hours after hospital discharge and will inquire on the patient's compliance with postdischarge health teachings. In addition, health education shall be provided should the need arise.

Role of the Doctor of Nursing Practice Student

As a nurse and nurse educator in the study site of the project, I have observed the frequent unplanned readmission of patients with cancer due to different chemotherapy-related causes. This prompted me to explore potential cost-effective and empirically-supported interventions to prevent or at least lessen the prevalence of unplanned

readmission among the said population. Hence, the aim of this project was to determine the effect of a nurse-led transitional discharge phone call on the unplanned readmission of patients with cancer undergoing chemotherapy. My role in this project was to facilitate the transition process from hospital to home setting among cancer patients on chemotherapy. In addition, I am the person in charge in planning, implementing, evaluating, and completing the intervention and the entire project. Bridging the gap during the discharge process through patient education and communication has always been a professional responsibility and a personal advocacy of mine, which further motivated me to assist discharge patients after their chemotherapy. In addition, as healthcare provider, I am also bound by my professional and moral responsibility to holistically help recuperate to a functional level and to contribute to the betterment of my healthcare institution. A structured plan of action and procedure was strictly followed as I implemented the intervention and the entire project. Likewise, I had set aside my personal concerns and perceptions which may affect the implementation and potential outcome of the project.

Role of the Project Team

The project team was composed of the nurse manager, the clinical nurse specialist, the nurse outcomes educator, the patient care director, and me. I was in charge of overseeing the conduct of the project, coordinating between and among the members of the team, and facilitating the smooth implementation of the intervention. The nurse manager and clinical nurse specialist were responsible for identifying the patients on chemotherapy who needed to be called and for conducting the nurse-led transitional

discharge phone call 48 to 72 hours after a patient was discharged. On the other hand, the nurse outcomes educator was responsible in writing and providing guidelines and standards on the care of patients on chemotherapy. Lastly, the patient care director was responsible for overseeing the general function and flow of the unit to meet all the requirements of the institution and the federal states.

Section 3: Collection and Analysis of Evidence

Introduction

The medical-oncology unit of a Northeastern hospital in the United States is a 28-bed capacity unit that experienced 11 unplanned readmissions in 2017 due to cancer-related causes. The aim of the evidence-based practice project was to implement a nurse-led transitional discharge phone call within 48 to 72 hours after discharge of cancer patients on chemotherapy and to determine its effectiveness on reducing unplanned readmission due to chemotherapy-related causes. Conducting a nurse-led transitional discharge phone call allows nurses to identify potential problems of the discharge transition and provide necessary health education to strengthen the discharge plan.

In this section I outline and discuss the different methodological approaches that I conducted in implementing the intervention. Specifically, in this section of the project I discuss the practice-focused question, the sources of evidence, and the analysis and synthesis plan of the project. I also discuss a summary of the entire project at the end of this section.

Practice-Focused Question

The hospital's protocol was to provide discharge instructions, follow-up appointment information, and medication information once discharge orders were given. However, the main challenge during the transition process was the communication, transmission, and realization of the discharge instructions. Hence, strategic measures to close this gap needed to be employed. The primary objective of the DNP project was to implement the nurse-led transitional discharge phone call protocol and evaluate its effect

on unplanned readmission of patients with cancer undergoing chemotherapy. Additionally, the project adopted a discharge phone call script that could assist nurse leaders in performing an effective and efficient nurse-led transitional discharge phone call. Overall, the practice-focused question was:

> PFQ: Among patients in the medical-oncology unit, what is the effect of a nurse-led transitional discharge phone call within 30-days after hospital discharge on unplanned readmission due to chemotherapy compared to patients without a nurse-led transitional discharge phone call?

Sources of Evidence

I conducted a comprehensive search and review of related research articles across various reputable databases including Scopus, ScienceDirect, EBSCO Host, Ovid, and PubMed. I considered research articles within the last 10 years which were available in English. The following key terms were used in the search: *transitional discharge phone call, discharge telephone call, discharge phone call, patient satisfaction, readmission rate, unplanned readmission,* and *unplanned hospital readmission.* I used Boolean logic operators and filters in the search of pertinent research articles.

The project included patients undergoing chemotherapy admitted in the medical-oncology unit of a Northeastern hospital in the United States. These patients were followed-up by the project team within 48 to 72 hours after discharge using a nurse-led transitional discharge phone call adopted from a study by Cherenzia (2017; see AppendixB. The contents of the transitional discharge phone call were structured following preestablished discharge information. This script was selected because of its

contextual relevance to patients with chemotherapy. Unlike most discharge phone calls scripts that are generic and nonspecific, the script of Cherenzia (2017) was developed specifically for patients on chemotherapy (see Appendix B). The script of Cherenzia et al. (2017) is publicly available online and can be used for research purposes. Patient outcomes, particularly unplanned readmission due to chemotherapy, were measured using the manual report of the hospital's clinical pharmacist. It was hypothesized that the collection and analysis of these outcomes would show fewer unplanned hospital readmission due to chemotherapy following use of the transitional discharge phone call..

Analysis and Synthesis

Data were initially written in a patient's tracker sheet (see Appendix C) before being encoded in a workbook using Microsoft Excel. The expected outcome variable of the study was the proportion of unplanned hospital readmissions due to chemotherapy. Summary results using descriptive statistics were employed with frequency and percentage.

Summary

Through nurse-led transitional discharge phone calls, nurses can facilitate better patient outcomes during the posthospitalization period. Particularly, such intervention can prevent or lessen unplanned hospital readmissions due to chemotherapy. By meticulously appraising available evidence on transitional discharge phone calls in reputable research databases with the use of a comprehensive search strategy, I implemented a nurse-led transitional discharge phone call protocol with patients undergoing chemotherapy in the medical-oncology unit of a hospital in Northeastern United States.

Section 4: Findings and Recommendations

Introduction

Unplanned chemotherapy-related hospital readmission is a preventable adverse outcome during the posthospitalization period among patients undergoing chemotherapy. A potential strategy to mitigate this problem is the nurse-led transitional discharge phone call, which can facilitate better patient outcomes during the posthospitalization period by lessening chemotherapy-associated complications that necessitate hospitalization. The practice-focused question was:

> PFQ: Among patients in the medical-oncology unit, what is the effect of a nurse-led transitional discharge phone call within 30-days after hospital discharge on unplanned readmission due to chemotherapy compared to patients without nurse-led transitional discharge phone call?

I meticulously appraised available evidence on transitional discharge phone calls in reputable databases using an extensive search strategy, and I have implemented the nurse-led transitional discharge phone calls among patients undergoing chemotherapy in the medical-oncology unit of a hospital in Northeastern United States. Frequency and percentage were used to summarize the gathered data.

Findings and Implications

The project was conducted from January 31, 2019 to March 15, 2019. Patients were recruited and received the nurse-led discharge phone call from January 31 to February 28, 2019, and they were followed-up 30-days from the completion of the intervention (February 28 to March 30, 2019). Gathered data was compared with the

previous year's proportion of patients with unplanned hospital readmission due to chemotherapy. From the results, six patients were called and interviewed via phone within 24 to 48 hours after discharge, while one patient requested to be called on a later date, and was interviewed within the 72nd hour after discharge. From the seven patients, one (14.29%) patient was readmitted within 1 week of discharge. This patient was readmitted because of cerebrospinal fluid leakage after a surgical procedure. Hence, the readmission is considered a surgery-related readmission rather than a chemotherapy-related readmission; therefore, this patient was excluded from the analysis of this project.

Seven patients were discharged and all of them (100.00%) received the nurse-led discharge phone call within 48 to 72 hours upon discharge; each call took approximately 20 to 30 minutes. During the call, patients were asked for their experience since their last chemotherapy and a general assessment of their health and selected chemotherapy-associated complications, namely, pain, infection, constipation, diarrhea, nausea, vomiting, and fatigue (see Cherenzia, 2017). The nurse caller also reviewed the current medications of the patient, assessed the need for additional education, and reminded the patient of their prescription refills. The nurse caller also conducted an assessment of the patient's coping with their condition and treatment regimen. In addition, the nurse caller reminded the patient of their next hospital appointment and succeeding chemotherapy session (see Cherenzia, 2017).

Among the seven patients, there was no unplanned hospital readmission (0.00%) due to chemotherapy-associated complications, and all patients returned or were scheduled to return for their next cycle of chemotherapy. In contrast, in the previous year

the hospital unit had 11 unplanned readmissions from 74 total admissions, constituting an unplanned readmission rate of approximately 15%. During this time, none of the patients received a postdischarge home intervention such as the discharge phone call, and patients were readmitted because of different chemotherapy-related complications such as bleeding conditions (e.g., hemoptysis, hematuria, hematemesis, etc.), blood problems (e.g., febrile pancytopenia, thrombocytopenia, anemia), infection and sepsis, chest pain, and shortness of breath. Compared to the hospital's previous year during which patients did not receive the nurse-led discharge phone calls and the readmission rates were high, the lower readmission rates in the project were attributed to the reinforcing health teachings of the nurse-led discharge phone call. As previously mentioned, the nurse-led discharge phone call incorporated several assessment points wherein the nurse caller provided reinforcing health teachings. These health teachings about pain, infection, nausea and vomiting, diarrhea, constipation, fatigue, and coping reinforced the patient's knowledge of how to manage these symptoms and bridged the information gap that may have existed prior to their hospital discharge (Dudas, Bookwalter, Kerr, & Pantilat, 2002; Nelson & Rosenthal, 2015; Tackitt, Eaton, & Lentz, 2016). This feature of the nurse-led discharge phone call allowed the translation of health teachings and knowledge into safe, health-promoting actions at home that may improve their health (Cain, Neuwirth, Bellows, Zuber, & Green, 2012).

Another important aspect of the nurse-led discharge phone call that may have contributed to the low prevalence of chemotherapy-related hospital readmission compared to the 15% unplanned readmission rate of the previous year, was its feature to

remind the patient about the care needed to avoid evitable complications of chemotherapy (Tang et al., 2014). During the discharge phone call, nurses were able to directly communicate with the patient to identify clinical and care-coordination problems during the immediate post discharge period and to provide accurate health discharge teachings that are necessary to promote posthospitalization health and well-being (Tang et al., 2014). In addition, the nurse-led discharge phone call served as a readily available problem-solving resource (Cain et al., 2012) wherein the nurse plays a pivotal role in improving the patient's health and well-being. In contrast, patients of the previous year who did not receive the nurse-led discharge phone call may have lacked credible sources of information for the care they required at home. Although nurses inform them before discharge, these instructions may be forgotten and home care compromised, which may lead to untoward complications that may necessitate untimely readmission.

It is also imperative to note that the nurse-led discharge phone call served as a bridge to distantly assess the patient's condition through their self-reported claims. During the phone calls, nurse callers were able to assess different aspects of health that may be affected by chemotherapy such as pain, infection, nausea and vomiting, constipation, fatigue, coping, and overall health perception (Cherenzia, 2017; Tackitt et al., 2016). With a comprehensive and detailed discharge phone call script, nurse callers are able to systematically identify health concerns of the patients and provide immediate health teachings to improve their condition. This feature of the nurse-led discharge phone call bridges the communication gap during the posthospitalization period, especially the period before the patient's next cycle or follow-up visit, which otherwise may have

negative implications for the patient's health (Dudas et al., 2002; Nelson & Rosenthal, 2015; Tackitt et al., 2016). Patients who did not receive the nurse-led discharge phone call may lack the ability to appropriately report these complaints and neglect them until the condition has worsened, requiring consult and readmission (Cherenzia, 2017; Tackitt et al., 2016).

Finally, the nurse-led discharge phone call may have contributed to the decrease in chemotherapy-related hospital readmissions because of the patient empowerment it provides to patients undergoing chemotherapy. Grounding the findings from the health belief model (Becker, 1976), patients were motivated to express their concerns about their health, their medical condition, and their treatment regimen. This feature makes the patients involved in their care as key contributors or players in improving their health, helping them transition from an illness-defined experience to a better, healthier life (Cain et al., 2012). Moreover, the empowerment that the nurse-led discharge phone call nurtures among the patients allows them to manage their health collaboratively with their healthcare providers (Cain et al., 2012).

The success of this nurse-led discharge phone call was highly dependent on the receptivity of the patients with phone-based health teachings and their availability of answering the phone. Although the current project allowed me to call all seven patients undergoing chemotherapy, I did experience some difficulty in contacting the patients, with one of them requesting to be called on a later date. Hence, it should be noted that, although the nurse-led discharge phone call has the potential to improve patient outcomes through informational supplementation and distant patient assessment, it can be highly

limited by the patient's availability to answer and respond to their phone call. Another potential limitation of the nurse-led discharge phone call is the subjectivity of patient responses. This lacks the accuracy of an in-person assessment because the patient is not physically seen by the nurse.

It is important to note that this project's findings have the potential to positively affect the community of patients undergoing chemotherapy as it translates discharge health teachings into safe home action; empowers patients to take an active role in the health and treatment regimen; bridges the gap between the healthcare provider and the patient during the posthospitalization period; and mitigates the potential complications of chemotherapy. These positive benefits of the nurse-led discharge phone calls do not only prevent or lessen the likelihood of unplanned hospital readmission; they also improve patients' overall health outcomes.

Recommendations

I highly recommend the inclusion and implementation of nurse-led discharge phone calls in the post discharge treatment plan of patients undergoing chemotherapy. I recommend the use of the discharge phone call script by Cherenzia (2017) in conducting the nurse-led discharge phone call because of its specificity to the needs and care needed by patients undergoing chemotherapy. It is able to help assess the specific chemotherapy-related outcomes that need to be focused on posthospitalization. In addition, I recommend that the nurse-led discharge phone call be conducted within 48 to 72 hours after hospitalization. This period is the most crucial period for patients undergoing chemotherapy wherein they experience a myriad of chemotherapy-related adverse

effects; thus, the discharge phone call can be a significant intervention to address issues arising during this time. Finally, I recommend the training and empowerment of nurses in the implementation of nurse-led discharge phone calls. Registered nurses play a pivotal role in this intervention and their ability to properly and accurately assess, educate, and empower discharged patients on chemotherapy. Enhancing nurses' ability to render the nurse-led discharge phone call is imperative for the success of the intervention.

Contribution of the Doctoral Project Team

The doctoral project team was composed of the nurse manager, the clinical nurse specialist, the nurse outcomes educator, the patient care director, and me. The team worked hand-in-hand with one another with the nurse manager and clinical nurse specialist tasked in identifying eligible patients for the nurse-led discharge phone call. In addition, they were responsible for calling the discharge patients within 48 to 72 hours upon hospital discharge, for interviewing the patients, and for providing the necessary supplemental health teachings identified during the phone call interview. I, on the other hand, was in-charge of overseeing the conduct of the project, coordinating between and among the members of the team, and facilitating the smooth implementation of the intervention. In coordination with me, the nurse outcomes educator and patient care director were responsible for creating the policy guidelines and standards in implementing the nurse-led discharge phone call necessary to meet institutional and federal state requirements. Furthermore, these three members of the team were in-charge for assessing the implementation of the nurse-led discharge phone call for possible adaptation in the existing practice of the hospital unit. These three team members have

decided to extend the implementation of the project for at least a year to allow further assessment of its potential incorporation in the unit's practices.

Strengths and Limitations of the Project

Despite the presented findings, this project has three significant limitations. First, the success of this nurse-led discharge phone call was highly dependent on the receptivity of the patients with phone-based health teachings and their availability of answering the phone. Although the current project was able to call all seven patients undergoing chemotherapy, I did experience some difficulty in contacting the patients, with one of them requesting to be called on a later date. Hence, it should be noted that, although the nurse-led discharge phone call has the propensity to improve patient outcomes through informational supplementation and distant patient assessment, it can be highly limited by the patient's availability to answer and respond to their phone call. Second, another potential limitation of the nurse-led discharge phone call is the subjectivity of patient responses; hence, it lacks the accuracy of assessment since the patient is not physically seen by the nurse. Lastly, this project was only limited to seven patients who were followed up from January to March 2019; hence, a longer implementation of the project may be warranted to assess the clinical significance of the nurse-led discharge phone call.

Section 5: Dissemination Plan

The results of this project will be disseminated to the Northeastern hospital where the project was implemented and conducted. The dissemination of the project findings shall involve a round table discussion with key health officials and stakeholders of the hospital such as nurse manager and medical oncologists. Furthermore, with the support of the hospital's key officials, the project's implementation will be continued. Aside from this, I aim to present the project in national and/or international conferences, fora, and symposia to present the findings to a larger audience.

Analysis of Self

During the course of this project, I experienced several hardships and trials, which made me question myself in continuing this project. However, with the support of the people around me, my work colleagues, my friends, my significant others, my family, and most of all, God, I have been motivated to strive to pursue this endeavor. Moreover, the learning that I have acquired throughout this project has made me attempt to be a better version of myself as a nurse practitioner, nurse educator, nurse manager, nurse researcher and scholar, and as an individual with a primary objective of improving the healthcare system for the benefit of my care recipients, my patients. The challenging experience I have had in this project made me further appreciate my role as a practitioner, manager, educator, policy influencer, and researcher, and it motivated me even more to continuously strive for the betterment of my patient's care. I see myself involved in future projects similar to this, despite the challenges they may entail, in an attempt to influence the existing policies, programs, and practices in our institution to achieve a

status wherein we do not only focus on the immediate care we render our patients, but also try to ensure a cohesive physician-nurse-patient collaboration aiming for one ultimate goal: better patient outcomes.

Summary

This project focused on the implementation of a nurse-led discharge phone call in decreasing chemotherapy-related unplanned hospital readmission among patients undergoing chemotherapy. In sum, the implementation of the above-mentioned intervention has reduced the prevalence of chemotherapy-related unplanned hospital readmission and has the potential of being implemented in medical institutions as a posthospitalization treatment care plan.

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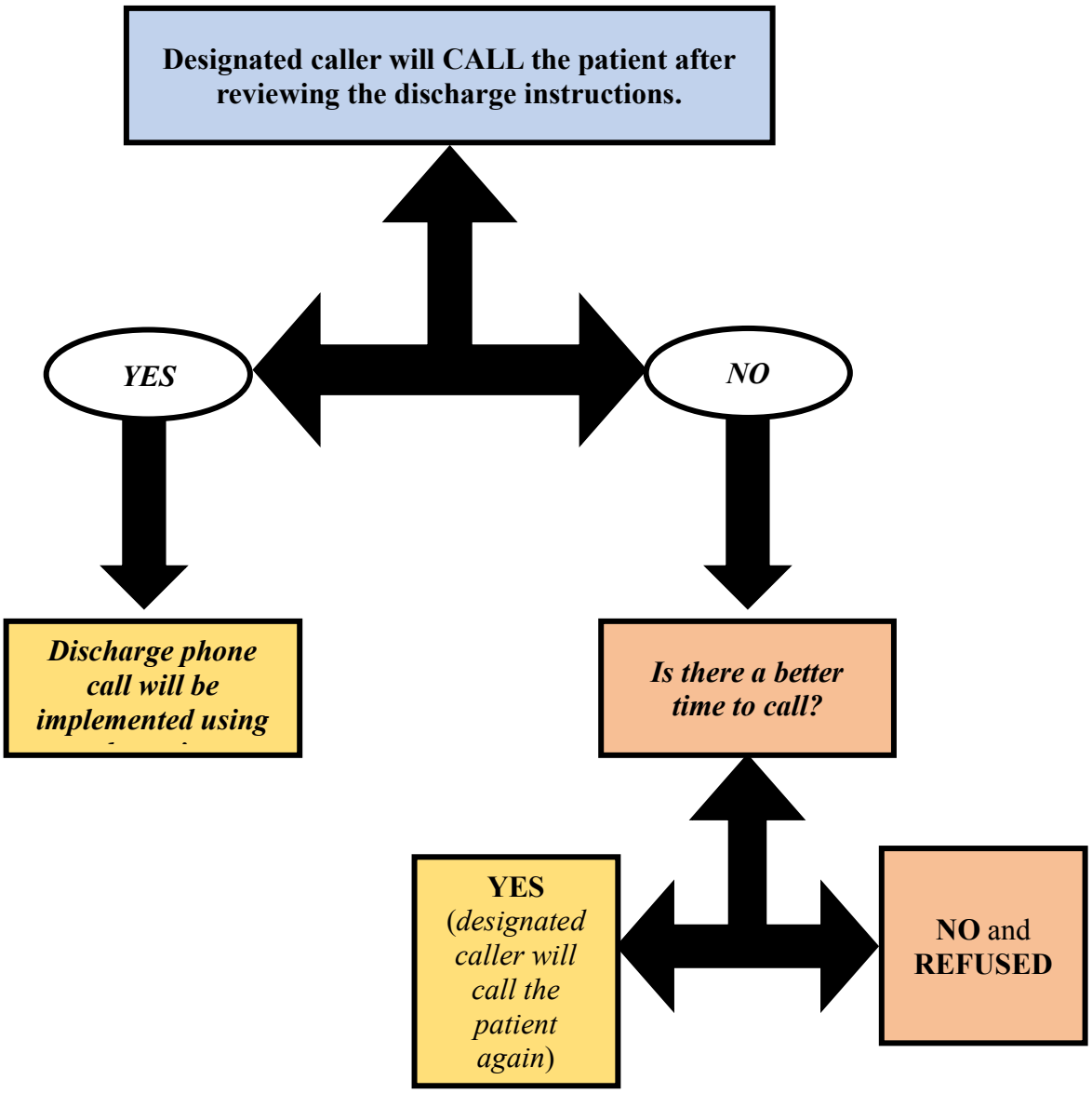
Appendix A: Nurse-Led Transitional Discharge Phone Call Workflow Process



Appendix B: Nurse-Led Transitional Discharge Phone Call Script

Hello, my name is _____, and I'm calling from B6/Oncology Unit at Sinai Hospital. I'm checking in because it has been a few days since you went home, and I wanted to see how you are doing. How are you feeling?

I'd also like to ask you a few questions about your recent experience.

Comprehensive Cancer Center: Post Initial Chemotherapy Telephone Follow-Up					
Script	**Assessment/Narrative**				
	Patient Active Problem List Diagnosis Treatment Plan: Date First Chemotherapy: Attending:				
"How have you been feeling since you received your chemotherapy?"					
Pain	Pain assessment Pain (activities that relieve): Pain (aggravating factors):				
Infection	Fever Chills				
	CTCAE V4 Grading				
	None	1	2	3	4
Constipation	☐	☐ Occasional or intermittent symptoms; occasional use of stool softeners, laxatives, dietary modification or enema	☐ Persistent symptoms with regular use of laxatives or enemas; limiting instrumental ADL	☐ Obstipation with manual evacuation indicted; limiting self care ADL	☐ Life-threatening consequences; urgent intervention indicated
Diarrhea	☐	☐ Increase of <4 stools per day over baseline, mild increase in ostomy output	☐ Increase of 4-6 stools per day over baseline; moderate increase in ostomy output compared to baseline	☐ Increase of >=7 stools per day over baseline; incontinence; hospitalization indicated; severe increase in ostomy	☐ Life-threatening consequences; urgent intervention indicated

		compared to baseline		output compared to baseline; limiting self care ADL	
Nausea	☐	☐ Loss of appetite without alteration in eating habits	☐ Oral intake decreased without significant weight loss, dehydration or malnutrition	☐ Inadequate oral caloric or fluid intake; tube feeding; TPN, or hospitalization indicated	☐ Life-threatening consequences; urgent intervention indicated
Vomiting	☐	☐ 1-2 episodes (separated by 5 minutes) in 24 hrs	☐ 3-5 episodes (separated by 5 minutes) in 24 hrs	☐ >=6 episodes (separated by 5 minutes) in 24 hrs; tube feeding; TPN or hospitalization indicated	
Fatigue	☐	☐ Fatigue relived by rest	☐ Fatigue not relieved by rest; limiting instrumental ADL	☐ Fatigue not relieved by rest; limiting self care ADL	
Other:					
Medications	Review current medications Need for additional medications for symptom management Prescription refills as appropriate				
"How are you coping?"					
Review Phone Triage/ Sick line information (including when appropriate to call)					
Next appointment information: Are you able to keep this appointment? If not, can I help reschedule?	Next appointment:				
Referrals	☐ MD	☐ NP/PA	☐ Navigator RN	☐ Social Work	☐ Infusion RN
Comments/ Notes:					

Do you have any suggestions for how we could have improved your stay?

We appreciate you speaking with us. Is there anything else I can do for you? Thank you for your time!

*This discharge phone call script was adapted from Cherenzia (2017) from h*ttps://digitalcommons.ric.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1189&context=etd